The position of these fishes, seven thousand feet above the level of the sea, furnishes another illustration of the extent of elevations of regions once connected with the ocean, and the comparatively late period of geologic time at which, in this case, this elevation took place."

If we find so much of interest and novelty in the preliminary report, how much has our science in store when the final report and its illustrations appear!

GEOGRAPHICAL DISTRIBUTION OF THE BEETLES.*—In this exceedingly interesting and suggestive essay, the author divides the Coleoptera of the world into three great "stirps," or assemblages:—the Indo-African, the Brazilian, and what for want of a better name he calls the "microtypal" stirps; the species composing it "being of a smaller size, or, more strictly speaking, not containing such large or conspicuous insects as the others." Thus all but the tropical, even including the Australian insects, are considered as belonging to this mass of small forms. "The coleopterous fauna of our own land [Great Britain] may be taken as its type and standard."

We very much question whether this division be not too artificial to be generally received by zoologists. The primary distribution of faunæ corresponding to the polar, temperate and tropical regions, would seem to be the more philosophical, being based on climatic causes.

Mr. Murray believes that the diffusion of animals and plants by accidental means "bears no important part in the establishment of any definite fauna or flora." He thinks that actual continuity of soil and subsequent isolation alone produce faunæ with a definite character. While he thinks these changes of surface took place before the Tertiary period, and does not believe that the new Atlantis, to take a case in point, existed during that period, yet he is one of the most ultra in the school of writers on geographical distribution who take up and put down continents like checkermen. Thus the Azores, Canary Islands and St. Helena, Ascension Island, St. Paul and Tristan d'Acunha, are to Mr. Murray the relics of a former continent, when the Atlantic was dry land, and Europe and America ocean beds. He puts down a

*On the Geographical Relations of the Chief Coleopterous Faunæ. By Andrew Murray. Extracted from the Linnæan Society's Journal.—Zoology, vol. XI, London, 1871. 8vo. pp. 89.

"stretch of dry land" between Old Calabar, Africa and Brazil, and again another "continental route of communication" between Patagonia and the Cape of Good Hope "and which, last of all and probably not without relation to the preceding, united Brazil and Madagascar." Now it seems to us this is in direct violation of one of the best founded and grandest laws in physical geography, as brought out by Professor Dana. He has shown that the present continents of the globe, were each built up around a Laurentian nucleus, and have gradually extended to their present dimensions, being originally islands or archipelagoes, and that the present ocean beds have never been dry land; the borders of the continents within the line of a hundred fathoms more or less, often involving thousands of square miles, oscillating above or below the ocean level, but with no intercontinental bridges. It seems to us that this law goes hand in hand with the climatic laws regulating the distribution of the faunæ of the earth, and that the writer of the essay before us has, in a measure, violated both at the outset.

Space does not permit us to notice the many new and extremely interesting points brought out by Mr. Murray in reference to the smaller faunæ, except to briefly give his remarks on our own fauna. We think that what we quote will show that while a great mass of facts are given, the author's broadest generalizations will not meet with general acceptance. Thus he labors to show that the fauna of Australia is much like that of Europe and North America, both being "microtypal," namely, having small species. By the same mode of reasoning an Esquimaux does not differ from an Australian, as both are not gigantic in stature, and hence both belong to the same primary fauna. He remarks, "North America has no special fauna or flora of its own. That which it has is a mixture of the microtypal and Brazilian stirps intermingled with fresh importations of different dates, and modified by the advance and retreat of the glacial epoch; but, on the whole, the preponderating element in its fauna is the microtypal." The similarity of the Californian fauna to that of Asia is accounted for by a "former communication having existed between Asia and California."

As to the European fauna and flora being the type of the "microtypal" fauna, we wonder what would have been considered the standard, if modern science had developed first in Japan or Australia, rather than Europe? Is the flora of North Temperate Amer-

ica any more European, than is that of northern Europe, North Temperate American? This is a species of anthropomorphism in science that we are disposed to distrust, as facts of distribution of life in palæozoic times, as Mr. Murray acknowledges, tend to show that the Silurian continental nucleus of Europe was not indebted to that of North America for its fauna, or *vice versa;* and in all probability there has been no interchange of forms between the Arctic and Antarctic lands. Do not the known facts in geographical distribution tend to show that the different continental nuclei have been from the first, distinct centres of distribution and evolution for the larger proportion of animals and plants, which may have evolved from ancestral forms, at the outset restricted to separate ocean beds, and separate continents?

The Brachiopoda of the Coast Survey Expedition.*—In this valuable contribution to our knowledge of the Brachiopods, Mr. Dall instead of being content with giving a synonymical list of the species, with descriptions, enters as thoroughly as his material would allow into the anatomy of these animals. He also enumerates the characters of the class, and the two orders in which it is divided. As a striking feature in the anatomy of *Terebratula Cubensis* he also notes "the absence of that great series of sinuses in the anterior part of the mantle, which was termed by Hancock 'the great pallial sinuses.'" The illustrations are excellent.

Sea Side Studies in Natural History.†—A second edition of this useful book has appeared. As a preparatory note states, it is a mere reprint of the first edition, with a few verbal changes. A brief notice of the recent deep sea explorations is added.

Catalogue of European Lepidoptera.‡—A catalogue of European butterflies and moths is of great use to the American student, and we are glad to see an enlarged and revised edition of the present work, the only available catalogue we have.

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*Report on the Brachiopoda obtained by the U. S. Coast Survey Expedition in charge of L. F. de Pourtalès, with a revision of the Craniidæ and Discinidæ, by W. H. Dall. Bulletin of the Museum of Comp. Zoology, Vol. 3. No. 1 with 2 plates. Cambridge, May 1871. 8vo. pp. 45.

†Sea side Studies in Natural History, by Elizabeth C. Agassiz and Alexander Agassiz. Marine Animals of Massachusetts Bay. Radiates. Boston. J. R. Osgood & Co. 1871. 8vo pp. 157, with 186 wood cuts.

‡Catalog der Lepidopteren des Europæischen Faunengebiets; I, Macrolepidoptera, bearbeitet von Dr. O. Staudinger; II, Microlepidoptera, bearbeitet von Dr. M. Wocke, Dresden, 1871. 8vo. pp. 426.